

L Number	Hits	Search Text	DB	Time stamp
1	193	MP52	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/09/08 17:12
2	19	MP52.clm.	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/09/08 17:12
3	12	crystallographically WITH calcium	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/09/08 17:15
4	0	MP52 and (crystallographically WITH calcium)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/09/08 17:16
5	11	(MP52 and bone) and crystal\$8	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/09/08 17:17
6	19	PAULISTA NEAR MICHAEL	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/09/08 17:17
7	39	(US-5994094-\$ or US-5658882-\$ or US-6409764-\$ or US-6328963-\$ or US-5700289-\$ or US-5691397-\$ or US-5522893-\$ or US-5306303-\$ or US-5262166-\$ or US-5171326-\$ or US-5149368-\$ or US-5137534-\$ or US-5135394-\$ or US-4772468-\$ or US-4655777-\$ or US-6120760-\$ or US-5801014-\$ or US-6531450-\$ or US-6727224-\$).did. or (US-20020102633-\$ or US-20020045568-\$ or US-20010016646-\$ or US-2002005143-\$).did. or (WO-9966060-\$ or EP-866125-\$ or WO-9833514-\$ or WO-9821972-\$ or WO-9706254-\$ or WO-9704095-\$ or WO-9703188-\$ or WO-9723612-\$ or WO-9504819-\$).did. or (JP-2000004882-\$ or JP-09031098-\$).did. or (WO-9961611-\$ or WO-9833514-\$ or WO-9741250-\$ or WO-9706254-\$ or WO-9704095-\$).did.	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/09/08 17:19
-	3462	424/93.\$2.ccls.	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/10/15 12:55
-	250	424/93.\$2.ccls. and bone.clm.	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/10/15 12:56
-	147	(424/93.\$2.ccls. and bone.clm.) and matrix	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/10/15 12:57
-	103	((424/93.\$2.ccls. and bone.clm.) and matrix) and (calcium or tricalcium)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/10/15 12:57
-	22	(424/93.\$2.ccls. and bone.clm.) and (matrix WITH (calcium or tricalcium))	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/10/15 12:58
-	1067	bone ADJ morphogenic ADJ protein	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/10/15 13:14

	2	(bone ADJ morphogenic ADJ protein) and (calcium NEAR matrix)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/10/15 13:14
	36	(MP52 and bone) and calcium	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/09/08 17:16
	37	(MP52 and bone) and (calcium or tricalcium)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/10/15 13:24
	26	((MP52 and bone) and (calcium or tricalcium)) and pure	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/10/15 13:25
	330	alpha-tricalcium or beta-tricalcium	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/10/15 13:29
	6	(alpha-tricalcium or beta-tricalcium) WITH matrix	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/10/15 13:26
	116	(alpha-tricalcium or beta-tricalcium) and bone.clm.	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/10/15 13:30
	108	((alpha-tricalcium or beta-tricalcium) and bone.clm.) and (matrix or composition or support)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/10/15 13:52
	8	((424/93.\$2.ccls. and bone.clm.) and (matrix WITH (calcium or tricalcium))) and pure	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/10/15 13:54
	0	((424/93.\$2.ccls. and bone.clm.) and (matrix WITH (calcium or tricalcium))) and phase-pure	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/10/15 13:54
	2	("6120760").PN.	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/10/15 15:19
	146	GDF-5 GDF5 MP52 MP-52	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/10/15 17:09
	106	(GDF-5 GDF5 MP52 MP-52) and (bone or cartilage)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/10/15 16:59
	22	(GDF-5 GDF5 MP52 MP-52).clm.	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/10/15 17:05
	5	WO ADJ "9504819"	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/10/15 17:40
	106	MP52 and bone	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/09/29 12:35
	70	(MP52 and bone) and matri\$10	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/09/29 12:35

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(FILE 'HOME' ENTERED AT 17:23:06 ON 08 SEP 2004)

FILE 'MEDLINE' ENTERED AT 17:23:23 ON 08 SEP 2004
L1 1 S MP52

FILE 'MEDLINE, AGRICOLA, CANCERLIT, SCISEARCH, CAPLUS, MEDICONF' ENTERED
AT 17:24:00 ON 08 SEP 2004
L2 40 S MP52
L3 39 DUP REM L2 (1 DUPLICATE REMOVED)
L4 24 S L3 AND (BONE OR CARTILAGE)
L5 3 S L3 AND (CALCIUM OR MATRIX OR CRYSTALLOGRAPHIC?)
L6 24 SORT L4 PY
E PAULISTA MICHAEL?/AU
L7 10 S E2
L8 3 S L7 AND L2

=> d an ti so au ab pi 18 1-3

L8 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1998:335063 CAPLUS
DN 129:32362
TI Compositions with improved cartilage- and/or bone-inducing activity
SO Ger. Offen., 12 pp.
CODEN: GWXXBX
IN Paulista, Michael; Pohl, Jens; Pabst, Joachim; Heide, Helmut
AB A bioactive implant material with cartilage- and/or bone-inducing activity comprises (A) a bone- and/or cartilage-inducing protein or protein mixture and (B) a microporous Ca phosphate ceramic carrier matrix with interconnecting pores, which has inherent bone-inducing activity. The inducing protein preferably belongs to the TGF- β superfamily, especially protein MP52. The implant material is useful for treatment of cartilage and/or bone damage or diseases (no data).
PATENT NO. KIND DATE APPLICATION NO. DATE

PI DE 19647853 A1 19980520 DE 1996-19647853 19961119
WO 9821972 A2 19980528 WO 1997-EP6463 19971119
WO 9821972 A3 19980917
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE,
DK, EE, ES, FI, GB, GE, GH, HU, ID, IL, IS, JP, KE, KG, KP, KR,
KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ,
PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG,
US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR,
GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA,
GN, ML, MR, NE, SN, TD, TG
AU 9855533 A1 19980610 AU 1998-55533 19971119
EP 942758 A2 19990922 EP 1997-951919 19971119
EP 942758 B1 20040114
R: DE, ES, FR, GB, IT
JP 2001505097 T2 20010417 JP 1998-523215 19971119
ES 2210592 T3 20040701 ES 1997-951919 19971119

L8 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1997:145191 CAPLUS
DN 126:139895
TI Use of protein MP52 for prevention and treatment of nervous system disorders
SO Ger. Offen., 21 pp.
CODEN: GWXXBX
IN Hoetten, Gertrud; Pohl, Jens; Bechtold, Rolf; Paulista, Michael; Unsicker, Klaus
AB Protein MP52, a growth and differentiation factor of the TGF- β superfamily, and fragments and fusion proteins thereof are useful for prevention and treatment of nervous system disorders and neuropathol. conditions caused by aging of the nervous system. MP52 improves the survival of dopaminergic neurons, at least partially through an action on the associated astrocytes. Thus, MP52

DNA on a vaccinia virus vector was expressed in 143B cells, and **MP52** DNA on prokaryotic vector pBP2 was expressed in Escherichia coli, purified by reversed-phase HPLC, and refolded at pH 8-10. Transcription of **MP52** DNA was observed in mouse brain and rat spinal cord.

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI DE 19525416	A1	19970116	DE 1995-19525416	19950712
WO 9703188	A2	19970130	WO 1996-EP3065	19960712
WO 9703188	A3	19970227		
W: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG				
RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA				
AU 9666151	A1	19970210	AU 1996-66151	19960712
ZA 9605938	A	19970217	ZA 1996-5938	19960712
EP 837938	A2	19980429	EP 1996-925740	19960712
R: DE, ES, FR, GB, IT				
JP 11509097	T2	19990817	JP 1996-505511	19960712
US 2002045568	A1	20020418	US 1998-981490	19980518
US 6531450	B2	20030311		
US 2003220248	A1	20031127	US 2003-356513	20030203

L8	ANSWER 3 OF 3 CAPLUS COPYRIGHT 2004 ACS on STN			
AN	1995:464505 CAPLUS			
DN	122:231763			
TI	A new growth/differentiation factor from the transforming growth factor β family			
SO	Ger. Offen., 20 pp.			
CODEN: GWXXBX				
IN	Hoetten, Gertrud; Neidhardt, Helge; Paulista, Michael			
AB	A new member of the TGF- β family of growth/differentiation factors (MP-52) and a cDNA and the gene encoding it are described. A partial cDNA was obtained by PCR using amino acid sequence-derived primers and this was used to screen a com. human gene bank to obtain the gene. Expression of the cDNA in animal cells is using vaccinia and bovine papillomavirus vectors is demonstrated. The protein was found to have.			
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI DE 4420157	A1	19950223	DE 1994-4420157	19940609
CA 2169171	AA	19950216	CA 1994-2169171	19940809
WO 9504819	A1	19950216	WO 1994-EP2630	19940809
W: AU, BY, CA, CN, CZ, HU, JP, KR, LT, NZ, RU, SI, UA, VN				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
AU 9474986	A1	19950228	AU 1994-74986	19940809
AU 688362	B2	19980312		
EP 713529	A1	19960529	EP 1994-924856	19940809
EP 713529	B1	20000202		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE				
CN 1129013	A	19960814	CN 1994-193027	19940809
HU 74271	A2	19961128	HU 1995-3853	19940809
HU 219504	B	20010428		
JP 09501053	T2	19970204	JP 1994-506226	19940809
AT 189475	E	20000215	AT 1994-924856	19940809
ES 2142953	T3	20000501	ES 1994-924856	19940809
PT 713529	T	20000630	PT 1994-924856	19940809
RU 2157406	C2	20001010	RU 1996-104372	19940809
CZ 288795	B6	20010912	CZ 1996-357	19940809
ZA 9405992	A	19950314	ZA 1994-5992	19940810
US 5994094	A	19991130	US 1994-288508	19940810
TW 448183	B	20010801	TW 1994-83108337	19940909
US 6764994	B1	20040720	US 1999-386450	19990831
GR 3032628	T3	20000531	GR 2000-400326	20000210
US 2004146979	A1	20040729	US 2004-800917	20040316

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(FILE 'HOME' ENTERED AT 17:23:06 ON 08 SEP 2004)

FILE 'MEDLINE' ENTERED AT 17:23:23 ON 08 SEP 2004

L1 1 S MP52

FILE 'MEDLINE, AGRICOLA, CANCERLIT, SCISEARCH, CAPLUS, MEDICONF' ENTERED
AT 17:24:00 ON 08 SEP 2004

L2 40 S MP52

L3 39 DUP REM L2 (1 DUPLICATE REMOVED)

L4 24 S L3 AND (BONE OR CARTILAGE)

L5 3 S L3 AND (CALCIUM OR MATRIX OR CRYSTALLOGRAPHIC?)

L6 24 SORT L4 PY

=> d an ti so au ab pi 16 10 3 7 8 9 12 23

L6 ANSWER 10 OF 24 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1998:335063 CAPLUS

DN 129:32362

TI Compositions with improved **cartilage**- and/or **bone**-inducing activity

SO Ger. Offen., 12 pp.

CODEN: GWXXBX

IN Paulista, Michael; Pohl, Jens; Pabst, Joachim; Heide, Helmut

AB A bioactive implant material with **cartilage**- and/or **bone**-inducing activity comprises (A) a **bone**- and/or **cartilage**-inducing protein or protein mixture and (B) a microporous Ca phosphate ceramic carrier matrix with interconnecting pores, which has inherent **bone**-inducing activity. The inducing protein preferably belongs to the TGF- β superfamily, especially protein MP52. The implant material is useful for treatment of **cartilage** and/or **bone** damage or diseases (no data).

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI DE 19647853	A1	19980520	DE 1996-19647853	19961119
WO 9821972	A2	19980528	WO 1997-EP6463	19971119
WO 9821972	A3	19980917		

W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG

AU 9855533	A1	19980610	AU 1998-55533	19971119
EP 942758	A2	19990922	EP 1997-951919	19971119
EP 942758	B1	20040114		

R: DE, ES, FR, GB, IT
JP 2001505097 T2 20010417 JP 1998-523215 19971119
ES 2210592 T3 20040701 ES 1997-951919 19971119

L6 ANSWER 3 OF 24 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1996:732173 CAPLUS

DN 126:1703

TI Recombinant preparation of dimeric human protein MP52 and use for treating **bone** diseases

SO PCT Int. Appl., 33 pp.

CODEN: PIXXD2

IN Makishima, Fusao; Takamatsu, Hiroyuki; Miki, Hideo; Kawai, Shinji; Kimura, Michio; Matsumoto, Tomoaki; Katsuura, Mieko; Enomoto, Koichi; Satoh, Yusuke

AB Methods for recombinant preparation of mature monomeric human protein MP52 (119 amino acids) in transgenic Escherichia coli followed by chemical dimerization of the protein are disclosed. Biol. effects of the dimer on stimulating the growth of **bones** or **cartilage** were also demonstrated. This dimer protein is useful in the treatment of **cartilage** and **bone** diseases.

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 9633215	A1	19961024	WO 1996-JP1062	19960419
W: AL, AM, AU, BB, BG, BR, CA, CN, CZ, EE, GE, HU, IS, JP, KG, KR, LK, LR, LT, LV, MD, MG, MK, MN, MX, NO, NZ, PL, RO, SG, SI, SK, TR, TT, UA, US, UZ, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
CA 2216741	AA	19961024	CA 1996-2216741	19960419
AU 9653470	A1	19961107	AU 1996-53470	19960419
AU 704515	B2	19990422		
CN 1187824	A	19980715	CN 1996-194702	19960419
EP 955313	A1	19991110	EP 1996-910198	19960419
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, PT, IE, SI, FI				
BR 9608019	A	19991130	BR 1996-8019	19960419
JP 2997549	B2	20000111	JP 1996-531621	19960419
AP 856	A	20000712	AP 1997-1138	19960419
W: KE, LS, MW, SD, SZ, UG				
PL 186518	B1	20040130	PL 1996-322945	19960419
NO 9704812	A	19971219	NO 1997-4812	19971017
US 2002102633	A1	20020801	US 1997-945459	19971209
US 2003181378	A1	20030925	US 2003-365231	20030212

L6 ANSWER 7 OF 24 CAPLUS COPYRIGHT 2004 ACS on STN
 AN 1997:244334 CAPLUS
 DN 126:221079
 TI Human **MP52** protein, its manufacture with recombinant cells, and its use in pharmaceuticals
 SO PCT Int. Appl., 25 pp.
 CODEN: PIXXD2
 IN Kimura, Michio; Matsumoto, Tomoaki; Takahashi, Mikiko; Kawai, Shinji; Fujino, Yukio
 AB This invention relates to a human **MP52** Arg and a pharmaceutical medical composition inter alia for promoting **cartilage** and **bone** morphogenation comprising human **MP52** Arg. In particular, the medical composition is useful for treating **bone** disease caused by abnormal **bone** metabolism such as osteoporosis, for treating **bone** fracture and for the purpose of orthopedic reconstruction, **bone** transplantation, cosmetic surgery and dental therapeutics. Further, it is useful for treating **cartilage** disorders. Recombinant CHO cells expressing prepro-human MP42 were prepared and cultured to obtain recombinant **MP52**. Treatment of ROB-C26 cells with the **MP52** increased total alkaline phosphatase activity in a concentration-dependent manner.

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 9706254	A1	19970220	WO 1996-EP3427	19960802
W: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, US, UZ, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM				
ZA 9606489	A	19970226	ZA 1996-6489	19960731
CA 2227204	AA	19970220	CA 1996-2227204	19960802
AU 9667891	A1	19970305	AU 1996-67891	19960802
AU 699708	B2	19981210		
EP 842274	A1	19980520	EP 1996-928406	19960802
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, PT, IE, FI				
CN 1192237	A	19980902	CN 1996-195841	19960802
BR 9609983	A	19990112	BR 1996-9983	19960802
JP 2000511155	T2	20000829	JP 1997-508115	19960802
NO 9800375	A	19980128	NO 1998-375	19980128

L6 ANSWER 8 OF 24 CAPLUS COPYRIGHT 2004 ACS on STN
 AN 1997:230835 CAPLUS

DN 126:207826
 TI Recombinant preparation of human protein **MP52** for medical and cosmetic applications
 SO Jpn. Kokai Tokkyo Koho, 24 pp.
 CODEN: JKXXAF
 IN Kimura, Michio; Matsumoto, Tomoaki; Takahashi, Mikiko; Kawai, Shinji; Fujino, Yukio
 AB High-mol.-weight human protein **MP52** (HMW **MP52**), a growth and differentiation factor of the TGF- β superfamily, is prepared by expression of its encoding DNA sequences in transgenic animal cells. HMW **MP52** consists of dimers of entire HMW **MP52** (501 amino acids) or its fragments. Its uses for orthopedic reconstruction, **bone** implantation, cosmetic surgery, dental implantation, etc., are claimed.
 PATENT NO. KIND DATE APPLICATION NO. DATE

 PI JP 09031098 A2 19970204 JP 1995-218022 19950724
 WO 9704095 A1 19970206 WO 1996-JP2065 19960724
 W: AU, CA, CN, HU, KR, MX, NO, NZ, RU, UA, US
 RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, NL, PT, SE
 CA 2224289 AA 19970206 CA 1996-2224289 19960724
 AU 9665304 A1 19970218 AU 1996-65304 19960724
 AU 704364 B2 19990422
 EP 866125 A1 19980923 EP 1996-925064 19960724
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, PT, IE, FI
 CN 1196087 A 19981014 CN 1996-196950 19960724
 NO 9800300 A 19980123 NO 1998-300 19980123

L6 ANSWER 9 OF 24 CAPLUS COPYRIGHT 2004 ACS on STN
 AN 1998:542980 CAPLUS
 DN 129:140696
 TI Freeze-dried composition of **bone** morphogenetic protein human **mp52**
 SO PCT Int. Appl., 10 pp.
 CODEN: PIXXD2
 IN Inagaki, Mitsuko; Ichikawa, Hideki
 AB The invention relates to a stable freeze-dried composition of a **bone** morphogenetic protein human **MP52** wherein coloration and shrinking of **MP52** during storage and aggregation at the re-dissoln. can be prevented. The composition is obtained by mixing **MP52** with mannitol at a weight ratio of 1 : 5 to 1 : 50 followed by freeze-drying.
 PATENT NO. KIND DATE APPLICATION NO. DATE

 PI WO 9833514 A1 19980806 WO 1998-JP371 19980129
 W: AL, AU, BA, BB, BG, BR, CA, CN, CU, CZ, EE, GE, GW, HU, ID, IL, IS, JP, KR, LC, LK, LR, LT, LV, MG, MK, MN, MX, NO, NZ, PL, RO, SG, SI, SK, SL, TR, TT, UA, US, UZ, VN, YU, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
 RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG
 AU 9856791 A1 19980825 AU 1998-56791 19980129
 AU 737595 B2 20010823
 EP 972520 A1 20000119 EP 1998-901044 19980129
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, PT, IE, FI
 BR 9807537 A 20000321 BR 1998-7537 19980129
 NZ 336509 A 20010330 NZ 1998-336509 19980129
 AP 983 A 20010716 AP 1999-1602 19980129
 W: GH, GM, KE, LS, MW, SD, SZ, UG, ZW
 MX 9906784 A 20000731 MX 1999-6784 19990721
 NO 9903702 A 19990929 NO 1999-3702 19990729
 US 2004132653 A1 20040708 US 2003-666535 20030922

L6 ANSWER 12 OF 24 CAPLUS COPYRIGHT 2004 ACS on STN
 AN 1999:764189 CAPLUS
 DN 132:9630
 TI Expression of mutant recombinant human **MP52** protein monomer with **bone** morphogenetic activity and its use for preventing and

treating **cartilage** and **bone** diseases
 SO PCT Int. Appl., 26 pp.
 CODEN: PIXXD2
 IN Kawai, Shinji; Kimura, Michio; Muraki, Yoshifumi; Katsuura, Mieko
 AB A mutant recombinant human **MP52** protein monomer belonging to
 TGF- β superfamily with two-fold higher activity for inducing
 osteoblast cell line differentiation was created by site-directed
 mutagenesis replacing a cysteine contributing to dimer formation with
 another amino acid. Another amino acid replacing a cysteine can be
 serine, threonine, alanine, or valine, and preferably alanine. The mutant
 recombinant protein can be expressed in *Escherichia coli*, yeast, insect
 cells, and mammalian cells that have been transformed with an expression
 vector having a DNA sequence coding for the monomer protein. The use of
 the mutant recombinant human **MP52** protein monomer for prevention
 and therapeutic treatment of **bone** and/or **cartilage**
 diseases such as osteoporosis, osteoarthritis or arthroseitis,
bone fracture, and lack of teeth root or tooth socket is claimed.

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 9961611	A1	19991202	WO 1999-IB866	19990514
W: AE, AL, AU, BA, BB, BG, BR, CA, CN, CU, CZ, EE, GE, HR, HU, ID, IL, IN, IS, JP, KP, KR, LC, LK, LR, LT, LV, MG, MK, MN, MX, NO, NZ, PL, RO, SG, SI, SK, SL, TR, TT, UA, US, UZ, VN, YU, ZA, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
JP 11335398	A2	19991207	JP 1998-141379	19980522
AU 9935309	A1	19991213	AU 1999-35309	19990514
EP 1078054	A1	20010228	EP 1999-917029	19990514
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, PT, IE, FI				
JP 2002516098	T2	20020604	JP 2000-550995	19990514

L6 ANSWER 23 OF 24 CAPLUS COPYRIGHT 2004 ACS on STN
 AN 2004:550724 CAPLUS

DN 141:76794

TI Lyophilized composition of **bone** morphogenetic factor human
MP52

SO U.S. Pat. Appl. Publ., 4 pp., Cont.-in-part of U.S. Ser. No. 355,551,
 abandoned.

CODEN: USXXCO

IN Ichikawa, Hideki; Inagaki, Mitsuko

AB By mixing **bone** morphogenetic factor human **MP52** with
 mannitol at a weight ratio of 1:5-50, followed by lyophilization, a stable
 lyophilized composition of **bone** morphogenetic factor human
MP52 is obtained which prevents coloring and atrophy of the
 lyophilized product of **bone** morphogenetic factor human
MP52 during storage and also prevents cohesion at the time of
 reconstitution. To 1 mg/mL of an aqueous solution of purified rhMP52, 10, 25,
 and 50 mg, D-mannitol was added. After the resulting mixture was filtered
 through a 0.22- μ m membrane filter, 1 mL portions of the filtrate so
 obtained were filled in vials in a sterile fashion. They were
 lyophilized, whereby a composition of the present invention was prepared in the
 form of pharmaceutical product.

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 2004132653	A1	20040708	US 2003-666535	20030922
WO 9833514	A1	19980806	WO 1998-JP371	19980129
W: AL, AU, BA, BB, BG, BR, CA, CN, CU, CZ, EE, GE, GW, HU, ID, IL, IS, JP, KR, LC, LK, LR, LT, LV, MG, MK, MN, MX, NO, NZ, PL, RO, SG, SI, SK, SL, TR, TT, UA, US, UZ, VN, YU, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				

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